

Pre-Calculus Overview

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1 Functions, Rates, and Patterns

This topic contains what a function is, types of functions, a look at rates, sequences and triangular differences, and functions defined by patterns.

2 Algebra and Geometry

This topic contains algebra and geometry, complex geometry and roots, conic sections, using matrices to find models, and using statistical regression to fit a function to bivariate data.

3 Exponential and Logarithmic Functions

This topic contains a special number, the natural logarithm function as the inverse of e^x , growth and decay, and using functions defined by patterns in application.

4 Trigonometry

This topic contains working with identities, trigonometric foundations, the trigonometric functions off the unit circle, angular and linear speed, working with more identities, and roller coasters.

5 Limits and Rate of Change of Functions

This topic contains a background on rational functions, limits, approximating rates of change, and the derivative.

6 Exploring Other Coordinate Systems

This topic contains a nonstandard exploration of the rate of change of functions, parametric equations, applications of parametric equations, vectors, the golf shot, the polar coordinate system, a nonstandard exploration of the polar

coordinate system, classic polar relations and conversions, and complex numbers.